

Mars TLP Module Deck Design – Fabrication and Inshore Installation

The Mars Tension Leg Platform (TLP) is a record setting oil and gas drilling and production platform located in 2940 feet of water in the Gulf of Mexico. The major components of the Mars TLP project include the hull and five deck modules (process, power, quarters, drilling, and wellbay). The Mars hull was fabricated in Italy and transported to the setting site on a heavy-lift transport vessel. All five modules were built and commissioned by the same fabricator and then transported to the module setting site. The setting and hookup work included lifting the modules and other equipment onto the hull; interconnection of structural steel, piping, electrical, and instrumentation systems; and commissioning of TLP-wide systems. Aker Gulf Marine (AGM) in Ingleside, Texas, performed this in protected water adjacent to their fabrication yard. To lift the modules, AGM designed, fabricated and tested a twin-boom, land-based Specialized Lifting Device (SLD).

The integrated modular deck concept with inshore setting and hookup allowed the Mars project to reduce costs and risks. The most significant benefits were: inshore setting and hookup of the modules using the SLD eliminated the extra costs associated with an offshore operation; construction alongside a bulkhead permitted larger crew sizes than could be safely worked offshore; the design permitted the efficient use of structural steel while minimizing redundant steel in the completed deck; the size of the modules permitted the majority of the fabrication work to be performed in large covered buildings, which reduced lost time due to weather; and the equipment on each module was function specific.

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